

ABSTRACT OF THE DISCLOSURE

An illumination system using filament lamps including a filament lamp, a reflector having a first and second focal points, the filament lamp disposed proximate to the first focal point of the reflector to emit rays of electromagnetic radiation that reflect from the reflector and converge substantially at the second focal point, wherein a portion of the electromagnetic radiation emitted by the filament lamp impinges directly on the reflector and a portion of the electromagnetic radiation does not impinge directly on the reflector and wherein the system further includes an additional reflector constructed and arranged to reflect at least part of the portion of the electromagnetic radiation that does not impinge directly on the reflector toward the reflector through the first focal point of the reflector.